Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (previously presented) A chimeric protein for inhibiting the expression of a gene which comprises (1) a DNA methyltransferase whose DNA-binding activity is attenuated relative to that of naturally occurring DNA methyltransferase, and (2) a DNA binding protein linked thereto that binds to the gene's promoter sequence under conditions permitting the methylation of a methylation site within the promoter of the gene, thus inhibiting expression of the target gene.

2. (previously presented) The protein of claim 1, wherein the promoter sequence of the gene is a 5' long terminal repeat sequence of a human immunodeficiency virus-1 proviral DNA.

3. (previously presented) The protein of claim 1, wherein the gene comprises a retroviral gene, an adenoviral gene, a foamy viral gene, a parvoviral gene, a foreign gene expressed in a cell, an over expressed gene, or a misexpressed gene.

4. (original) The protein of claim 1, wherein the chimeric protein comprises a zinc three-finger DNA binding polypeptide linked to a CpG-specific DNA methyltransferase polypepetide.

5. (original) The protein of claim 1, wherein the chimeric protein comprises a mutated Lex A binding polypeptide

linked to a cytosine methyltransferase polypeptide.

6. (previously presented) The chimeric protein of claim 1, wherein the DNA methyltransferase is a *Spiroplasma* MQ1 DNA methyltransferase (*M.SssI* DNA methyltransferase) whose DNA-binding activity is attenuated relative to that of naturally occurring *M.SssI* DNA methyltransferase, or a mutated mammalian DNA methyltransferase whose DNA binding activity is attenuated relative to that of naturally occurring mammalian DNA methyltransferase.

7. (original) An expression vector which encodes the chimeric protein of claim 1.

8. (original) The vector of claim 7, wherein the expression vector is replicable.

9. (canceled)

10. (original) The vector of claim 7, wherein the vector is a prokaryotic expression vector, a yeast expression vector, a baculovirus expression vector, a mammalian expression vector, or an episomal mammalian expression vector.

11. (previously presented) A method for inhibiting expression of a gene which comprises contacting a promoter of the gene with the chimeric protein of claim 1 so as to methylate the promoter, thus inhibiting expression of the gene.

12. (previously presented) The method of claim 11, wherein the gene is an endogenous gene.

13. (previously presented) The method of claim 11, wherein the

gene is a foreign gene.

14. (previously presented) The method of claim 13, wherein the foreign gene is a retroviral gene or a viral gene.

15. (previously presented) The method of claim 11, wherein the gene is associated with a cancer, a central nervous system disorder, a metabolic disorder, a cardiovascular disorder, an autoimmune disorder, an infectious disease or an inflammatory disorder.

16-17 (canceled)

18. (original) The method of claim 15, wherein the infectious disease is cytomegalovirus, herpes simplex virus, human immmunodefficiency virus, AIDS, papillomavirus, influenza, candida albicans, mycobacteria, septic shock, or associated with a gram negative bacteria.

19-23 (canceled)

24. (original) The method of claim 11, wherein the target gene is in a cell.

25. (currently amended) The method of claim 24, wherein the cell is a eukaryotic cell, a bacterial cell, an animal cell, a plant cell, a prokaryotic cell, a virus packaging cell, a somatic cell, a germ cell, a neuronal cell, a myocyte, a T lymphocyte, a $CD4^+$ cell, a tumor cell~~, a CD4+ cell~~, or a stem cell.

26. (original) The method of claim 11, wherein the contacting is by means of liposome mediated delivery, retroviral

delivery, gene bombardment, electroporation or cationic precipitation.

27-41 (canceled)

42. (original) A host cell comprising the expression vector of claim 7.

43. (currently amended) The host cell of claim 42, wherein the host cell is chosen from the group consisting of a eukaryotic cell, a somatic cell, a germ cell, a neuronal cell, a myocyte, a T lymphocyte, a prokaryotic cell, a virus packaging cell, a plant cell~~, a prokaryotic cell~~, a tumor cell, a stem cell and a CD4+ cell.

44. (original) A pharmaceutical composition comprisig a therapeutically effective amount of the expression vector of claim 7 and pharmaceutically acceptable carrier.

45. (original) The pharmaceutical composition of claim 44, wherein the carrier comprises a diluent.

46. (original) The pharmaceutical composition of claim 44, wherein the pharmaceutically acceptable carrier is an aerosol, intravenous, oral or topical carrier.

47. (canceled)